
Cheetah cub


Komodo monitor


Przewalski's horse with foal

CRES REPORT

THE CENTER FOR REPRODUCTION OF ENDANGERED SPECIES

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1982 CRES Highlights

The past year has been an important one for CRES–both for the progress we have made in our work and for the growing support we have received from those who share our concern for the preservation of endangered wildlife.

The CRES REPORT is designed to keep you informed about our research activities. This first issue highlights the accomplishments of our program in 1982. In coming issues, we will be reviewing projects in progress.

Kurt Benirschke, M.D.
Director

Genetics

Our work with *Przewalski's horses* has been particularly exciting this year. Through the efforts of our staff geneticist Dr. Oliver Ryder, numerous exchanges of Przewalski's have been effected between this country and Europe. The most notable exchange, however, has taken place with Russia's Askania Nova Nature Reserve. In a cooperative effort with the Bronx Zoo, three American horses were exchanged with three from Russia, markedly enriching the gene pool of American Przewalski's. This unprecedented exchange between the two countries has been possible because Dr. Ryder has taken the initiative to become species coordinator for this animal and has computerized the pedigree for the species. Other species have also been computerized and will be managed similarly.

Innovative DNA research has allowed an estimation of the genetic difference between the very endangered *northern white rhinoceros* and the southern form. Based on our studies, divergence into two distinct species is believed to have occurred some two million years ago, the recognition of which reinforces the greater need for conservation of the northern subspecies.

Reproductive Physiology

Systematic research has continued into the reproductive cycles of many species. Most notably, the cycles of the *great apes* are now well-established due to monitoring by our endocrine laboratory. Much to our surprise, it was found that the pregnancy of *orang-utans* was much more similar to humans in terms of hormonal elements than that of *gorillas* and *chimpanzees*.

A significant advance was made this year in simplifying the hormone analysis process. Since all studies done in our endocrine laboratory are done from urine, it was previously necessary to "split" hormones from other elements with which they are combined before analysis could be done. Through use of techniques developed by our endocrine specialists, it has now become possible to measure hormones without splitting them, an important step toward the production of time-saving analysis "kits" which can be used in the field and by other zoos.

In studying the world's largest lizard the Komodo monitor and other reptiles, Dr. John Phillips has examined requirements of light and temperature for breeding efficiency. In an expedition to Indonesia, he learned that the normal body temperature of Komodo lizards in their native habitat is much above that of our zoo animals. Subsequent changing of light and temperature for experimental lizards has much improved their reproduction.

Following the much-publicized capture of a *California condor* chick in August, our laboratory has developed a procedure to determine the sex for this severely threatened species. As part of the Condor Recovery Program being centered at the San Diego Wild Animal Park, our staff can now sex and release captured condors within thirty hours, far less than the 48-hour period specified by the U.S. Fish and Wildlife Service. To date four condors have been sexed and have been returned to the wild; only one was female.

Behavior

Behavioral research has this year increased breeding success with both the *lion-tailed macaque* and the *cheetah*. Five macaques were born after close attention was given the breeding cycles of females and to their pairing with sexually experienced males. Added to our rapidly growing cheetah breeding colony were eight cheetah cubs, the result largely of behavioral studies which indicated a need for pairing on a short-term instead of a constant basis. Of additional importance was the recognition that 75% of captive-reared cheetahs, as opposed to none from the wild, have perforations of palates, apparently from overgrown teeth. This discovery has led to restructuring of the soft artificial diet given carnivores which is believed to cause the tooth overgrowth and consequent perforation.

Virology

Much important progress has been made in our very new virology division. An urgent need was the isolation of the virus of malignant catarrh, a deadly disease of hoofstock. Not only was the virus isolated, a rapid diagnostic test was developed. Negotiations are currently underway to have our laboratory designated as a reference laboratory for the U.S. Department of Agriculture. Other diseases believed to be virus related were also investigated, with the finding that 60% of the leopard population tested was affected by a hepatitis B-like virus and many of our lemurs threatened by a toxoplasmosis parasite. An extensive serum survey indicated a need for vaccinating zoo species such as deer, antelope and wild sheep, goats and cattle against bluetongue, a serious disease of their domestic counterparts.